GRASSROOTS JOURNALS

JOURNAL OF ENVIRONMENTAL LAW & POLICY | 03(02) AUGUST 2023
Published by The Grassroots Institute, in partnership with Yaroslav Mudriy National Law University of Ukraine, and in collaboration with Northern Institute of Minority & Environmental Law, University of Lapland. Website: https://grassrootsjournals.org/jelp

ISSN 2564-016X | August 2023

M – 00349 | Analytical Article | Open Access

THE SHODDY LEGAL FRAMEWORK ON OIL SPILL IN NIGERIA: A CALL FOR A POTENT APPROACH

Israel Oluwaseyi Akindipe
Vermont Law and Graduate School, 164 Chelsea St, South Royalton, VT 05068;
868 Hegeman Avenue, Brooklyn, New York, USA
Email: israelakindipe@yahoo.com | ORCID: https://orcid.org/0009000600914760

Received: 09 June 2023 | **Accepted:** 05 July 2023 | **Published:** 27 August 2023

ABSTRACT

Oil spills have adversely affected the oil-bearing communities in resource-rich regions of Nigeria, especially the Niger Delta Region. Over the decades, the underlying causes of this menace and its consequent effect on the environment, economy, and human rights in the Niger Delta have generated endless debates, civil unrest, and insurgencies. In order to identify the reason for these unabated oil spills, this project examined the current and relevant legislation on oil spills in Nigeria, including all legal and regulatory frameworks governing the oil and gas sector in the country. The assessment focused on how to safeguard the environment and ensure that Nigeria benefits sustainably from an oil-based economy. The fundamental finding that was found is that recurring and unabated oil spills pillage Nigeria solely because of the inadequacy of existing legislation to curb the menace. Nigeria still does not have a strong framework, with it over six decades of oil production. While there exist enforcement issues, the major problem is the inadequacy of existing laws. There is a huge gap in oil spill governance in Nigeria because several standards and legislation are missing. The existing legal framework features the absence of prevention, planning, and preparedness mechanism; lack of an immediate clean-up mechanism; lack of a contingency plan; no liability limits for removal costs and damages; pre-emption of state laws and a lax punitive measure. Although the country can boast of several laws regulating the oil sector, combining these laws has failed in minimizing or preventing oil spills. The study then projected the legal framework governing oil spills in the United States with a particular emphasis on the U.S. Oil Pollution Act of 1990 (OPA). It gave an overview of the strategies and standards contained in the U.S. legal regime. It further explained the fundamental differences and similarities between Nigeria and the U.S. The paper found that the U.S. approach to mitigating oil spill incidents could fill up the clear gaps in the oil spill regime in Nigeria. The paper recommends that Nigeria adopt the various standards inherent in the U.S. Oil Pollution Act of 1990, such as creating a contingency plan, a higher liability limit, and the non-preemption of state laws. Although there exist functional differences between the operation of the legal system in Nigeria and that of the United States, the paper highlighted how the U.S. model could easily be transferred to Nigeria. The study compiles the oil spill occurrence data from both a Nigerian Government Agency (NOSDRA) and Amnesty International. The Agency's data was mostly used in the project as it is more reliable and acceptable. The paper assessed all relevant legislation on oil spills in Nigeria. It also assessed the U.S. Oil Pollution Act, which is the major statute governing oil pollution in the U.S. The Study recommended the United States model as a potent approach because of the country's high oil production capacity being the largest oil-producing country in the world.

Keywords: Oil Spill, Oil Theft and Bunkering, Corruption in Nigeria, Oil Pipeline Vandalism, Niger Delta and Ogoniland

Editor-in-Chief: Prof. Dr. Kamrul Hossain | *Deputy Editors-in-Chief:* Dr. Evgeniya Kopitsa, Prof. Dr. Ngozi Finette Unuigbe | *Executive Editor:* Dr. Hasrat Arjjumend

How to cite this paper: Israel O. Akindipe, 'The Shoddy Legal Framework on Oil Spill in Nigeria: A Call for a Potent Approach', (2023) 03 (02) Journal of Environmental Law & Policy 27-54 <https://doi.org/10.33002/jelp03.02.02>

Copyright © 2023 by author(s). This work is licensed under the Creative Commons Attribution International License (CC BY 4.0). http://creativecommons.org/licenses/by/4.0/

Open Access

1. INTRODUCTION

Nigeria, undoubtedly, is one of the world's largest exporters and a critical major oil supplier to Western Europe. It was regarded as the 5th largest supplier of crude oil to the United States in 2002. Nigeria's economy profoundly and solely depends on the oil sector, which accounts for 90-95% of the foreign exchange revenues and 80% of government revenues[1]. The Niger Delta region of Nigeria, which comprises 9 out of 36 states, is one of the most polluted places on Earth[2]. The four Niger Delta states of Delta, Rivers, Bayelsa, and Akwa-Ibom jointly produce 93% of Nigeria's crude oil.[3] These states experience economic and environmental nightmares occasioned by decades of oil spill incidences on their land, solely attributable to unceasing oil exploration activities.[4] There are over 1,000 oil spills per year in these oil-producing areas.[5] These oil spill incidents have eroded the local communities' livelihoods[6], well-being, and health[7]. Sometimes, the scale and magnitudes of these spills are so severe that it becomes imperative for local communities to emigrate to a safe environment owing to unabated human rights issues.[8] Not only have the oil spills from wells and pipelines exposed native residents to toxic chemicals, but they have also contaminated farmlands and water bodies, thereby, truncating the people's habitual preoccupation with farming and fishing activities.[9] Therefore, attempting to reverse the damage done to public health and the regional ecosystem would take decades. A United Environment Program (UNEP) report released in 2011 affirmed that it could take up to 30 years to reverse many of the environmental consequences of oil spillage in the Niger Delta. It further stated that the area has high rainfall and any delay in cleaning up an oil spill in the region would lead to the oil spreading wide and far, coursing its way into arable lands and community surroundings. Some of the studies at

1 Sule-Iko, S.S.S., and Nwoye, M.I., 'Effect of International Crude Oil Prices on Nigeria's Gross Domestic Product from (1985-2020),' (2023) 11 Journal of Human Resource and Sustainability Studies 118-137. <https://doi.org/10.4236/jhrss.2023.111008>.

2 Kalu, V.E., and Stewart, N.F., 'Nigeria's Niger Delta Crises and Resolution of Oil and Gas Related Disputes: Need for a Paradigm Shift', (2007) 25(3) Journal of Energy and Natural Resources Law 247. <https://doi.org/10.1080/02646811.2007.11433462>.

3 Ojewale, O., and Le Roux, A., 'Endless Oil spills blackens Ogoniland's prospect', Institute for Security Studies, March 2022, <https://issafrica.org/iss-today/endless-oil-spills-blacken-ogonilands-prospects>, accessed 20 July 2023.

4 Kadafa, A.A., Zakaria, M.P., and Othman, F., 'Oil Spillage and Pollution in Nigeria: Organizational Management and Institutional Framework', (2012) 2(4) Journal of Environmental and Health Science 22 <https://api.semanticscholar.org/CorpusID:109426229>.

5 Peter Hansen, 'Climate Justice in Nigeria', Climate Scorecard, March 2022, <www.climatescorecard.org/2022/03/climate-justice-in-nigeria/>, accessed 21 July 2023.

6 Azubuike, S.I., and Songi, O., 'A Rights-based Approach to Oil Spill Investigations: A Case Study of the Bodo Community Oil spill in Nigeria', (2020) 1.1 Global Energy, Law and Sustainability 28-54. <https://doi.org/10.3366/gels.2020.0005>.

7 Bosch, X., 'Exposure to oil spill has a detrimental effect on clean-up workers' health', (2003) 361 (9352) The Lancet 147. <https://doi.org/10.1016/S0140-6736(03)12249-0>.

8 Okonkwo, E.C., 'Environmentally displaced persons in the Niger Delta: challenges and prospects', (2016) Energy, Governance and Sustainability 269–290. Edward Elgar Publishing, Cheltenham, United Kingdom. <https://doi.org/10.4337/9781785368462.00021>.

9 Elum, Z.A., Mopipi, K., and Henri-Ukoha, A., 'Oil exploitation and its socioeconomic effects on the Niger Delta region of Nigeria', (2016) 23(13) Environ Sci Pollut Res 12880–12889. <https://doi.org/10.1007/s11356-016-6864-1>.

Ejama-Ebubu in Eleme Local Government Area (LGA) found heavy oil debris present after 40 years since an oil spill incident occurred in the area, despite countless clean-up attempts.[10] The figure 1 shows the confounding amount of barrels of oil spills reported in Nigerian communities in the last 15 years (2007-2022).

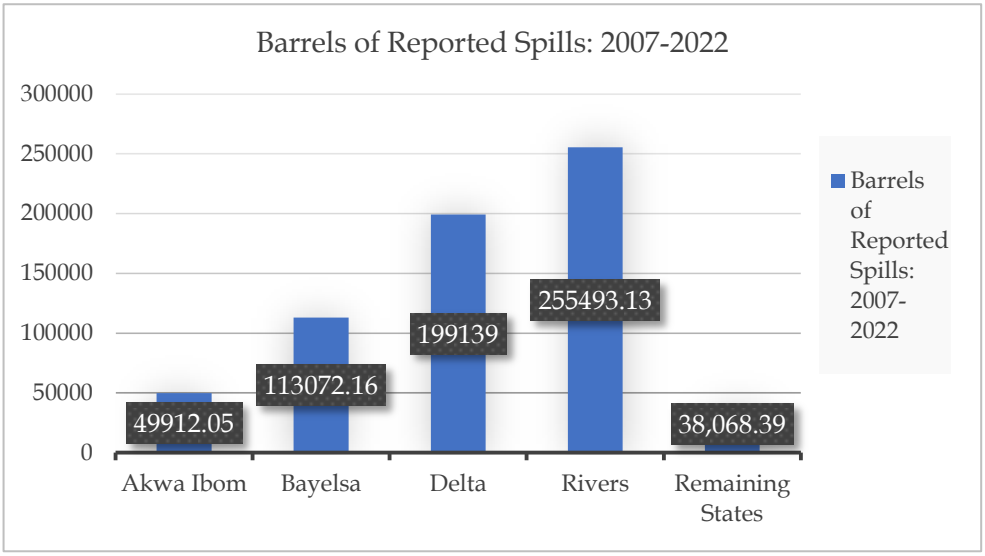

Figure 1: Amount of oil spills in Nigerian communities between 2007 and 2022 [*Data Source*: Nigerian Oil Spill Monitor, National Oil Spill Detection and Response Agency, Sept. 2022]

Over the decades, the underlying causes of this menace and its consequent effect on the environment, economy, and human rights in the Niger Delta have generated endless debates, civil unrest, and insurgencies.[11] Despite the numerous oil spill incidents that occur daily, a more robust and fail-proof framework to tackle these events has yet to be developed. The existing shoddy framework features the absence of prevention, planning, and preparedness mechanism; lack of an immediate clean-up mechanism; lack of a contingency plan; no liability limits for removal costs and damages; pre-emption of state laws and a lax punitive measure. While the nation can boast of several laws regulating the oil sector, combining these laws has failed in minimizing or preventing oil spills. Neither has any law or regulation provided effective clean-up measures or responses for the impacted sites. There are currently no penalties or fines for oil spills in Nigeria. Oil companies are only required to report oil spills and fund the clean-up of such spills if and only if the spill was the company's fault.[12] Also, the remedial measures provided are

[10] Ibid

[11] Amnesty International, 'Nigeria: Petroleum, Pollution and Poverty in the Niger Delta', AFR 44/017/2009, 30 June 2009, <https://www.refworld.org/docid/4a4a1dfc2.html>, accessed 21 August 2023.

[12] *About oil spills in* Nigeria, Nigerian Oil Spill Monitor, https://nosdra.oilspillmonitor.ng/about.html, accessed 20 August 2023.

insignificant as responsible parties are only liable for paying paltry sums as compensation to local communities affected. What currently exists in Nigeria is lax legislation and inadequate legislation. It was expected that an abundance of oil should cause high economic growth and a conducive environment. Still, the opposite has been the case in Nigeria, with the pollution of the oil communities as a result of these spillages. If oil spillage can be addressed in Nigeria, there will be an improved environment that will propel economic success.

The primary contention in this paper is not whether environmental laws or policies regulating oil spills exist in Nigeria but rather to see if such laws have adequate provisions sufficient for achieving the desired sustainable environment. Indeed, to consider the efficacy of existing legislation, this paper considered the model of oil pollution governance in the U.S. and took a careful look at how the U.S. is combating oil pollution. Equally, the paper also assessed the various legislation governing oil spill incidents in Nigeria to see if the existing legislation is potent enough in curtailing oil spill incidences, ensuring rapid clean-up measures, and providing adequate remedial and punitive measures to both the communities and the culprits, respectively, as is obtainable in the U.S model.

The choice of the United States as an appropriate model is predicated on the fact that relevant legislation regulating oil spills in the United States is the Oil Pollution Act of 1990, and this law has existed for over three decades. During this period, oil spill incidences in the U.S. have tremendously decreased. Although it is not the case that oil spills no longer occur in the U.S., realistically, the rate of occurrence has significantly dropped despite the increase in the volume of oil produced and transported all over the country.

This paper essentially analyzes and addresses the lax and frail legislation governing oil spills in Nigeria, hence the need to adopt a new standard. The serious daily occurrence of oil spills in Nigeria, which the existing legislation has not abated, has seriously impacted the various communities where these incidences occur.

2. ASSESSING THE LITERATION ON THE OIL SPILL REGULATORY FRAMEWORK IN NIGERIA

There is a dearth of texts about the legal framework governing oil spills in Nigeria. The current literature either examines some of the laws or looks halfway into oil spill incidents. A study[13] found that the legislation sanctioning oil spills in Nigeria has yet to be effective, questioning the alarming rate at which oil spill incidents have increased despite the legislation sanctioning the act. The study also reviewed legislation sanctioning oil spills to identify the deficiencies in the current regulatory

[13] Chuks-Ezike, C.I., 'Deficient Legislation Sanctioning Oil Spill in Nigeria: A Need for a Review of the Regulatory Component of Petroleum Laws in Nigeria and the Petroleum Industries Bill.' (2018) 7(1) International Journal of Environment and Sustainability, 30-44, <https://doi.org/10.24102/ijes.v7i1.816>

framework.[14] The study then advanced salient reasons for the inability to sanction oil spills in Nigeria effectively.[15] Furthermore, another study[16] explored the manner and the reason for the failure of the legal framework in Nigeria to redress the environmental destruction of oil spills caused by multinational companies. The study suggested that plaintiffs in Nigeria, i.e., oil spill victims, should approach and obtain relief from U.S. courts if they can allege transnational harm, particularly if the alleged damage is to U.S. interest since what currently exist are inadequate legislations and standards that would ensure no liability for responsible parties.[17] Similarly, a study[18] provided a historical background to Shell's activities in the Niger Delta region and identified the inadequacy of the current legislation, which has made monitoring and enforcement in the oil industry quite tricky. After studying the various activities of Shell and other multinational companies in Nigeria, the study concluded that inadequate legislation has resulted in a lack of monitoring of the oil production activities of these oil companies, which is the primary cause of oil spill activities.[19]

The literature on the oil spill legal framework in Nigeria does not provide what standards should be adopted to fill the void left by the shoddiness and inadequacy of existing legislation in Nigeria. Moreover, the literature was restricted to sanctions and monitoring of oil spills only, with a work recommending pursuing redress in U.S. courts due to the inadequacy.

This paper seeks to fill the significant gap in the existing scholarly literature by having a holistic review of the regulatory framework governing oil spills in Nigeria, from prevention and preparedness to clean-up, remediation, and punishment for responsible parties. The paper's focus is to examine and recommend new standards that could be adopted to ensure the adequacy of the legal framework in Nigeria and design an effective grievance redress mechanism for oil spills in Nigeria.

3. OIL PERTINENCE AND OIL SPILL IN NIGERIA

3.1 Why is oil important to the Nigerian State?

Nigeria is Africa's largest oil-producing region[20]. The oil sector accounts for 80% of Nigeria's budgetary revenues and 95% of its foreign

[14] Ibid.
[15] Ibid.
[16] Donnelly-Saalfield, J., 'Irreparable Harms: How the Devastating Effects of Oil Extraction in Nigeria Have Not Been Remedied by Nigerian Courts, the African Commission, or U.S. Courts', (2009) 15 Hastings West Northwest J. of Envtl. L. & Pol'y 371. <https://repository.uclawsf.edu/hastings_environmental_law_journal/vol15/iss2/11>, accessed 21 August 2023.
[17] Ibid.
[18] Konne, B.R., 'Inadequate Monitoring and Enforcement in the Nigerian Oil Industry: The Case of Shell and Ogoniland,' (2014) 47(1) Cornell International Law Journal 181. <https://scholarship.law.cornell.edu/cilj/vol47/iss1/6>, accessed 21 August 2023.
[19] Ibid.
[20] Nwilo, P.C., and Badejo O.T., 'Oil Spills Problems and Management in the Niger Delta', (2005) (1) International Oil Spill Conference Proceedings 1 May 2005, 567–570. <https://doi.org/10.7901/2169-3358-2005-1-567>.

exchange earnings.[21] Nigeria, whose economic mainstay was agriculture in the early and mid-twentieth century, suddenly shifted and relied mainly on oil upon its discovery in the late twentieth century. The oil industry has severely affected the Nigerian State because it is the economy's mainstay.[22] Oil production also funds numerous multibillion-dollar investments in Nigeria, as most sectors and infrastructure are financed through oil revenue. As a result of the inability to find cheap alternatives to oil as a form of energy, crude oil production has become more relevant in contemporary times. Thus, making oil production, a necessary evil Nigeria cannot help but embrace[23].

3.2 Causes Of Oil Spill

First, the major party responsible for oil spills in Nigeria is the oil industry. There are over 50 oil and gas companies in Nigeria, with Shell being the largest oil operator alongside Texaco, Agip, Total, Chevron, and ExxonMobil. In August 2021, Shell agreed to pay 45.9 billion Naira (US$ 111 million) as compensation to affected communities in Ogoniland for the violations occasioned by their oil exploration activities. Unbridled oil exploration activities of oil companies are occasioned by corrosion, breaks in aging infrastructure, poor maintenance of infrastructure, and equipment failure. However, oil companies have often defended the scale of pollution by claiming that most oil spills are caused by sabotage or oil theft, thus making it impossible for communities to claim damages against the oil companies. The other parties responsible for the oil spill incidents in Nigeria are oil thieves and saboteurs. Oil spills occur due to the theft of oil and the sabotage of oil pipelines. There has been an outrageous rise in oil theft and racketeering activities in the oil sector in Nigeria.[24] These oils are stolen directly from oil pipelines by sabotaging oil infrastructure. Further, due to intense hostility between the multinational oil companies and the host communities, several local militants have engaged in the sabotage and vandalism of oil pipes.

3.3 Impact of Oil Spill and the Extent of Environmental Damage

An Amnesty International report detailed the damaging effects of oil spills on aquatic species and man's survival.[25] The report showed how the Niger Delta residents heavily rely on fishing for their survival and

[21] Sule-Iko, S.S.S., and Nwoye, M. I., 'Effect of International Crude Oil Prices on Nigeria's Gross Domestic Product from (1985-2020)', (2023) 11 Journal of Human Resource and Sustainability Studies 118-137. <https://doi.org/10.4236/jhrss.2023.111008>.

[22] Uwakonye, M. N., Osho, G. S., and Anucha, H., 'The Impact Of Oil And Gas Production On The Nigerian Economy: A Rural Sector Econometric Model', (2016) 5(2) International Business & Economics Research Journal (IBER) 62. <https://doi.org/10.19030/iber.v5i2.3458>.

[23] Akinlo, A.E., 'How Important is Oil in Nigeria's Economic Growth?' (2012) 5(4) Journal of Sustainable Development 165. <https://doi.org/10.5539/jsd.v5n4p165>.

[24] Izoukumor, N.A., 'A Critical Assessment of the Pollution Prevention Laws and Regulations of Nigeria: Why They Failed to Protect the Environment of Nigeria', (2019) 87 Journal of Law, Policy and Globalization, <https://doi.org/10.7176/jlpg/87-06>.

[25] Amnesty International, 'Petroleum, Pollution and Poverty in the Niger delta Index', Amnesty International Afr/44/017/2009. <http://www.amnesty.org/en/documents/afr44/018/2009/en/>, accessed 10 August 2023.

sustenance and how the continuous oil spills have adversely affected the water system. Although the Niger Delta region relies heavily on agriculture for its livelihood, it has been reported that oil pipelines run across farmlands and other oil infrastructure is very close to the farmlands.[26] Oil spills in the region reduce the crude protein in cassava by at least 40% and the ascorbic content of vegetables by 36%, thereby, resulting in a 24% increase in the pervasiveness of childhood malnutrition in the Niger Delta.[27] Another study embarked on by the United Nations Environmental Program at the request of the Federal Government of Nigeria found that virtually all water in Ogoni Land has been polluted as the drinking water contains a known carcinogen (benzene) at levels 900 times above World Health Organization (WHO) guidelines.[28] UNEP findings indicated that oil spills in Ogoni Land are widespread, therefore, affecting the entire Ogoni environment. In addition, the water in Ogoni Land is exposed to hydrocarbons spilled on the surface. This hydrocarbon pollution in the groundwater in Ogoni Land surpassed and exceeded the Nigerian National Standards set out by the environmental guidelines and standards for the petroleum industries in Nigeria. Another study posited that various emissions from the combustion of associated gases contain toxins that increase the risks of airborne disease, food insecurity, and weather damage.[29]

4. A CRITICAL OVERVIEW OF EXISTING LEGISLATION RELATED TO OIL POLLUTION IN NIGERIA

There are five different major laws governing oil pollution in Nigeria, which include the 1999 Constitution of the Federal Republic of Nigeria (as amended), the Petroleum Industrial Act, the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act, the National Oil Spill Detection and Response Agency Act, and the Petroleum Production and Distribution (Anti-Sabotage) Act. This paper will clearly reveal how inadequate the current legal framework governing oil spill incidences in Nigeria is by critically examining each of these laws and their effects in curbing oil spills.

---

26 Ibid.

27 Ordinioha, B., and Brisibe, S., 'The human health implications of crude oil spills in the Niger Delta, Nigeria: An interpretation of published studies', (2013) 54 (1) Nigeria Medical Journal 10. <https://doi.org/10.4103/0300-1652.108887>.

28 United Nations Environmental Programme, 'Environmental Assessment of Ogoni land' (2011)', <https://wedocs.unep.org/bitstream/handle/20.500.11822/7947/-Environmental%20Assessment%20of%20Ogoniland-2011UNEP_OEA.pdf?sequence=3&isAllowed=y>, accessed 10 August 2023.

29 Edafienene, A., 'Media exposure, policy agenda setting and risk communication in Sub-Saharan Africa: a case study of Nigeria's Niger Delta region', (2012) Ph.D. Dissertation, University of South Wales. <https://pure.southwales.ac.uk/en/studentthesis/media-exposure-policy-agenda-setting-and-risk-communication-in-subsaharan-africa(4ca95e78-cb00-4677-bf3b-c65d261bde3e).html>, accessed 10 August 2023.

4.1 The Constitution of the Federal Republic of Nigeria (1999)

This is the principal and towering law regulating the enactment and enforcement of all laws in Nigeria. The constitution does not explicitly make legislation on oil matters; however, it identified the level of government that would be solely responsible for making legislation regulating "mines and minerals, including oil fields, oil mining, geological surveys, and natural gas." It vested this authority exclusively in the Federal Government.[30] This shows that only the Federal Government is constitutionally empowered to make laws regarding oil spill infractions, as the item was placed on the exclusive legislative list for the Federal Government. This provision itself is a fundamental defect, as state governments should be allowed to make regulations addressing oil spills in their respective states. There are provisions in the constitution with blanket statements on protecting the environment, like Section 20, which mandates the State to protect and improve the environment and safeguard Nigeria's water, air and land, forest, and wildlife[31]. Likewise, Sections 33 and 34 jointly provide for and guarantee the right to life and human dignity. However, attention should be placed on Section 17(2)(d), which forbids the exploitation of human or natural resources in whatever form but for the good of the community.[32] The expression 'for the good of the community' might connote that environmentally detrimental activities, like oil spills, would be allowed if they benefit Nigeria economically.

Furthermore, if a state or local government attempts to make laws or regulations to address oil spills and other environmental degradation incidences in their domain, such actions could be declared null and void by the courts if they contravene the authority of the federal government. Section 4(5) of the Nigerian Constitution states that any provision of a law of a house of state assembly, that is inconsistent with federal law, shall be null and void to the extent of its inconsistency. And as stated earlier, some of the matters which the states are prevented from legislating on include oil mining, oil field geological surveys, and natural gas, thereby creating monumental incapacitation for states in the Niger Delta region, as they have been restricted from regulating oil spill incidences in their respective states. Another limitation to the efforts to substantially repress the pandemic oil spill incidences in Nigeria is the barrier to non-governmental bodies or environmental activists in bringing injunctive action against the players in the oil sector. Section 13 of the Nigerian Constitution provides that the provisions of Chapter II (Fundamental Objectives and Directive Principles of State Policy) cannot be enforced in any court. This means that the provision of Section 20, which places the responsibility of protecting and improving the environment on the federal government, is non-justiciable.[33] This provision removes the right to enforce the State's

[30] Schedule II, Part I, Item 39 of the 1999 Constitution of the Federal Republic of Nigeria
[31] S. 20 of the 1999 Constitution of the Federal Republic of Nigeria.
[32] S. 17(2)(D) of the 1999 Constitution of the Federal Republic of Nigeria
[33] Ugbaja, F., 'Regulation of Environmental Pollution in the Nigerian Oil and Gas Industry: The Need for an Alternative Approach' (2016) master's thesis, University of Calgary, Canada. <https://prism.ucalgary.ca>; <http://doi.org/10.11575/PRISM/27585>.

constitutionally declared obligation and the citizens' rights. So, the criticism of the Constitution that it is ineffective and offers no defense to the environment is highly justified. In critiquing Section 20 of the CFRN (1999),[34] a writer argued that this provision is marred with defects as the wording of the section is very broad, making its interpretation cumbersome.

Clearly, the Nigerian Constitution is the supreme law in Nigeria. All other laws derive their validity from it. While Section 20 of the Constitution provides for the protection of the environment and its values by the Nigerian government, interestingly, the Federal Government through the legislative houses has not done enough in putting up legal frameworks to combat the unceasing incidences of the oil spill in the Niger Delta region. Although the constitution reflects environmental concerns,[35] those concerns are grossly inadequate in addressing or providing a remedy for victims of oil spills in the Niger Delta Region of Nigeria.

4.2 Petroleum Industry Act

In 2000, the Petroleum Industry Bill (PIB) was introduced in the National Assembly for the first time; after years of discussion, the bill was re-introduced in 2012. This Petroleum Industry Bill was signed into law on the 16th of August 2021. The PIB would, among other things, put in place an environmental quality management plan that would require more outstanding commitment by companies to remedy and control environmental degradation related to oil extraction and oil spills. However, the PIB does not set out a grievance mechanism or compensation and remediation scheme for oil spill-related complaints, even though it creates yet another regulatory body that appears to duplicate existing institutions. This paper seeks to determine the new legislation's effect on addressing oil spill incidents and their environmental implications in Nigeria.

The Petroleum Act establishes the principal framework for companies to be able to hold and exercise the rights to explore for and produce oil in a given lease area. Amongst other languages on compensation, it also provides for those holding oil licenses to "be liable to pay fair and adequate compensation for the disturbance of surface or other rights to any person who owns or is in lawful occupation of the licensed or leased lands." As such, the Petroleum Act establishes the principle that those affected by the activities of the oil industry are entitled to compensation in return. However, as with other legal texts, it does not provide sufficient guidance on the assessment method of such compensation, who should carry out this assessment, or who should settle disputes arising if parties disagree on the compensation value. Therefore, reference to the Act concerning compensation matters is often meaningless.

---

[34] Fagbohun, O., 'Reappraising the Nigerian Constitution for Environmental Management', (2002) 1 (1) Ambrose Alli University Law Journal 44.

[35] S. 20 of the 1999 Constitution of the Federal Republic of Nigeria.

The only aspect of oil pollution covered by the Act was regarding operators of licenses and leases (Oil Companies). The Act creates the environmental remediation fund to rehabilitate or manage negative environmental impacts from oil companies' operations. This Environmental Remediation Fund is financed through contributions charged as part of the conditions of granting a license or lease. This fund is only to be applied when an oil company's operation has caused any negative impact on the environment. However, oil companies have found a way around this by blaming oil spill incidents on saboteurs or oil thieves. This created a window for preventing strict liability for the oil spill incidence by oil companies. This is a result of the provision of the Petroleum Industry Act that states:

> *'Where in any year, an act of vandalism, sabotage, or other civil unrest occurs that causes damage to petroleum and designated facilities or disrupts production activities within the host community, the community shall forfeit its entitlement to the extent of the cost of repairs of the damage that resulted from the act.'*[36]

The Act caters to the host communities by creating a Host Community Trust Fund, which must be funded by 3% of the upstream petroleum operators' annual operating expenditure.[37] The fund is not for oil spill cleaning but for the economic and social benefits of the host communities in the oil-producing areas. This 3% seems very low when compared to the damages that oil spills have caused to the communities.

Furthermore, another poor provision of the Act was the creation of a funding mechanism where 30% of the Nigerian National Petroleum Commission's share of profits from oil production will be used for a new frontier exploration fund.[38] This seems ironical in the sense that rather than the legislation being directed towards creating an oil spill cleaning fund that will abate the devastating effects of oil spills in the host communities with existing oil wells, the act has directed the Nigerian government toward creating a new frontier of exploration fund (for further oil exploration) by using 30% of Nigerian National Petroleum Corporation's (NNPC) share of profit from oil production. The germane question to ask is why the trust fund was not set up for oil spill clean-up operations in the affected communities to assure all Nigerians of a safe, healthy, and peaceful environment. The 30% would have been better utilized in addressing oil spill incidents by funding the cleaning activities.

4.3 National Environmental Standards and Regulations Enforcement Agency (NESREA) Act, 2007

The National Environmental Standards Regulation Enforcement Agency (NESREA) is the frontline regulatory body responsible for protecting the environment in Nigeria. Surprisingly, the provisions of the NESREA Act do not apply to Nigeria's oil and gas industry. The Act

[36] S. 257 of the Petroleum Industry Act
[37] S. 240(2) of the Petroleum Industry Act
[38] S. 9(4) of the Petroleum Industry Act

expressly excludes the infractions that might arise from the oil and gas sector in the country.[39] In other words, the most comprehensive enactment regulating environmental pollution deliberately left out the country's most fatal cause of environmental degradation and pollution[40]. This decision to exclude NESREA from exercising jurisdiction over oil and gas-related pollution is the most significant shortcoming of the NESREA ACT of 2007.

4.4 The National Oil Spill Detection and Response Agency Act (NOSDRA Act 2006)

This is the only Act that appears to contain some provisions for addressing the menace of oil spills ravaging the oil-producing communities in Nigeria. The Act established an agency, the National Oil Spill Detection and Response Agency (NOSDRA), whose mandate is to prepare, detect, and respond to oil spillages in Nigeria.[41] Apart from intensifying efforts towards compliance monitoring and enforcement of oil and gas regulations and standards, NOSDRA is making efforts to ensure the use of environmental-friendly drilling fluid and mud systems by the oil and gas operators. However, the agency has so far not done anything tangible in abating oil spills as it was not provided with the necessary funds to implement clean-ups. The agency relies on the oil companies' detection and clean-up activities.

Although NOSDRA's mission is to ensure zero tolerance for oil spill incidents in the Nigerian environment, this agency has turned into another colossal failure of a government body. The oil companies are the only bodies that sometimes ensure the detection of and response to oil spill incidences. What NOSDRA does effectively is to update oil spill statistics on its database. The NOSDRA Act provides that the agency shall be "responsible for surveillance and ensure compliance with all existing legislation on oil spills in the petroleum sector."[42] This provision confers on NOSDRA the jurisdiction for implementing applicable laws to the oil and gas sector. However, the pertinent question at issue is where are the laws?

Perusing the penal provisions, Section 6(2) of the NOSDRA Act prescribes a fine of 2 million Naira (US$ 2,500) daily for a failure to report an oil spill incident by an oil spiller. While Section 6(3) further prescribes a maximum fine of 5 million Naira (US$ 6,250) for the failure to clean up an impacted site to all practicable extent. These are the only provision that prescribes punishment in the Act. There is currently no penalty for willful

[39] S.7 of NESREA Act provides that the Agency shall-
(g) enforce compliance with regulations on the importation, exportation, production, distribution, storage, sale, use, handling and disposal of hazardous chemicals, and waste other than in the oil and gas sector.
(h) enforce through compliance monitoring, the environmental regulations, and standards on noise, air, land, seas, oceans and other water bodies other than in the oil and gas sector.
(j) enforce environmental control measures through registration, licensing, and permitting systems other than in the oil and gas sector.

[40] Section 8(g) of the NESREA Act provides that the Agency shall have the power to conduct public investigations on pollution and the degradation of natural resources, except investigations on oil spillage.

[41] S.1 of the NOSDRA Act 2006

[42] S. 6(1)(a) NOSDRA Act 2006

endangerment of life due to oil spills. Furthermore, Section 6(2) is unconvincing for two reasons. First, it does not expressly prohibit or sanction oil spills. It only prescribes penalties for failure to report the spill. Secondly, it creates an avenue for an oil spiller to rather not clean up a spill but just report it. Consequently, such a spiller would only be liable to a maximum penalty of 5 million Naira (US$ 6,250). This makes a mockery of the "polluter must pay" principle, as this Act does not impose fines or other penalties on companies for their disastrous act of oil spillages. It only makes provision for reporting oil spill incidents.

It is quite unfortunate that despite the mandate given to NOSDRA to address oil spill incidences in Nigeria, it is not empowered to impose further penalties on oil companies for their devastating, environment-unfriendly pursuits, except for the provisions regarding the reporting of oil spills and the clean-up exercise. Thus, the legislation is inadequate, given the recurrent severe oil spill incidents in which the nation is still engulfed.

4.5 Petroleum Production and Distribution (Anti–Sabotage) Act, 2004

This law addresses the offense of sabotaging the production and distribution of petroleum products. It prohibits willful engagement with intent to obstruct or prevent the production or distribution of petroleum products in Nigeria.[43] This offense is capital in nature. Any person who commits a crime of sabotage is liable, on conviction, to a death sentence or imprisonment for a term not exceeding 21 years.[44] The Act also provides that anybody who aids another person, incites, counsels, or procures any other person is guilty of sabotage.[45] This stringent provision has, nonetheless, failed to deter oil thieves from diverting oil from pipelines, nor have the militants been restrained from vandalizing the oil facilities. The Nigeria Security and Civil Defense Corps (NSCDC) made over 500 arrests in 2021 but could only secure 122 convictions.[46]

4.6 Summary of Findings

While it is self-evident that there are laws regulating oil spills in Nigeria, these laws need to be more adequate in preventing oil spills. This overview of relevant laws governing oil spills in Nigeria has clearly revealed that the current laws lack the standards to curb or effectively control oil spill incidences in the Niger Delta. The Constitution of Nigeria, for instance, clearly exempted the jurisdiction of state governments on oil and gas matters, thereby, making it impossible for states or local governments to make or enforce laws, regulations, and policies on oil spills. Similarly, the Petroleum Industry Act created a remediation fund. Still, it also included a caveat that the fund shall not be disbursed to the victims if an oil company disclaims liability. Similarly, PIA and other laws

[43] S. 1(a) of Petroleum Production and Distribution (Anti-Sabotage) Act, LFRN 2004
[44] S. 2 of Petroleum Production and Distribution (Anti-Sabotage) Act, LFRN 2004
[45] S. 1(b) of Petroleum Production and Distribution (Anti-Sabotage) Act, LFRN 2004
[46] Ajayi, O., 'NSCDC secures 122 convictions, 503 arrests in 2021', Vanguard, December 21, 2021, <https://www.vanguardngr.com/2021/12/nscdc-secures-122-convictions-503-arrests-in-2021/>, accessed 10 August 2023.

do not provide for the creation of a trust fund for contingency plans to ensure immediate cleanup of oil spills in the event no one is taking responsibility. Another fundamental defect of the current legal framework is the lack of liability limits for responsible parties. As a matter of fact, no specific amount for liability (cleanup and damages) was provided, thereby, encouraging responsible parties to only spend paltry amounts on cleaning up and compensating victims.

Oil spill claims are not processed and awarded according to a standard guide on measuring, evaluating, and awarding compensation for environmental damage from oil industry operations. Instead, there are several pieces of legislation that in some way identify and address aspects of compensation, some of which include provisions for damages to be made. The primary and obvious problem with this is that it creates an almost limitless opportunity for dispute. Without an agreed benchmark for what compensation should be granted and how it should be assessed, it is difficult to establish even the formal procedure to decide the benchmark to solve the dispute. The result is compensation cases that are almost impossible for a local community and oil company to resolve between themselves. As such, they must be settled in court. But this can take years to do so, as a case is repeatedly assessed for its relevance to multiple and overlapping pieces of legislation on a procedural basis before it can be tested on its merits.

Another interesting shortcoming is reflected in two laws already discussed, namely NESREA Act and NOSDRA Act. NESREA Act provided for the inspection and seizure of facilities that cause pollution to the environment. However, this act excludes the operation of this provision for oil and gas activities. On the other hand, NOSDRA Act, whose provisions include the responsibility for NOSDRA to respond to oil spills, does not provide NOSDRA the authority to inspect and seize oil facilities, i.e., the body does not have the power to take preventive and clean-up actions or punitive measures against oil spill activities.

Lastly, the fines and terms of imprisonment in all these statutes are so paltry that they mock the POLLUTER-PAY-PRINCIPLE, making this viable environmental enforcement tool a mere illusion in Nigeria.

5. BARRIERS TO EFFECTIVE ENFORCEMENT OF LEGISLATION IN NIGERIA

There exists a lack of continuity of programs, governmental corruption, and a lack of political will in the governance of Nigeria. Each administration of government wants to pursue a new and separate agenda, hence, abandoning any measure that was previously initiated by the previous administration. In addition, while corruption is a global issue, the corrupt culture prevalent among public officials in Nigeria is worrisome.[47]

[47] Ikpeze, N., 'Fusion of anti–corruption agencies in Nigeria: a critical appraisal', (2013) 1(1) Journal of Sustainable Development Law and Policy 148-167. <https://www.ajol.info/index.php/jsdlp/article/view/140528/130269>, accessed 10 August 2023.

Also, a lack of the political will to get things done by public officials in Nigeria leads to poor enforcement of policies and a lack of proper implementation of strategies.

6. THE UNITED STATES MODEL

The United States was the highest crude oil producer in the world between 2018 and 2021,[48] with crude oil being produced in 32 U.S. states. The top 5 states as of 2021 are Texas, New Mexico, North Dakota, Alaska, and Colorado. Every year, large quantities of oil are transported to several destinations in the U.S. through pipelines and vessels.[49]

Sequel to 1989, the U.S. regulatory framework lacked certain standards. This led to several occurrences of large spills of oil which lingered for a long time before cleanup operations were conducted. However, in the wake of the 1989 Exxon Valdez spill, the U.S. Congress then enacted the Oil Pollution Act of 1990 to create stricter preventive standards, efficient clean-up exercises, impose severe costs, and impose penalties,[50] minimize future oil spills, and ensure that the responsible parties for oil spills pay for the damages. This response by the United States to a monumental oil spill disaster in 1989, which released approximately 11 million gallons of crude oil into Prince William Sound, Alaska, was a notable example of a country's proactiveness in remedying a shoddy regulatory framework that has proven to be inadequate in combating all forms of oil pollution.[51] Consequently, over the past three decades, oil spill incidents in the U.S. have tremendously decreased. The number of oil spills in the U.S. substantially dropped from above 600 in 1990 to below 100 in 2012.[52] Although it is not the case that oil spills no longer occur in the U.S., realistically, the rate of occurrence has significantly dropped.

7. WHY THE U.S MODEL IS MOST PREFERABLE

This paper chose the United States as a model because the U.S. is an Oil Juggernaut. The United States has been the largest oil-producing country in the world since 2018. In 2022 alone, oil production in the U.S.

---

48 U.S. Energy Information Administration, 'Oil and petroleum products explained: Where our oil comes from', U.S. Energy Information Administration, 16 September 2022, https://www.eia.gov/energyexplained/oil-and-petroleum-products/where-our-oil-comes-from.php, accessed 20 August 2023.

49 Jonathan, R., 'CRS Report for Congress Oil Spills in U.S. Coastal Waters: Background, Governance, and Issues for Congress', (2010) Congressional Research Service 7-5700, <https://www.epw.senate.gov/public/_cache/files/d/b/db4335ea-2eac-4e97-b37d-7bb90bb4b165/01AFD79733D77F24A71FEF9DAFCCB056.crs-oilspills043010.pdf>, accessed 10 August 2023.

50 Oil Pollution Act of 1990, 33 U.S.C.A. S.2701

51 National Research Council (U.S) Committee on Oil in the Sea, Inputs, Fates, and Effects, 'Oil in the Sea III: Inputs, Fates, and Effects', (2003) National Academics Press (U.S), <https://doi.org/10.17226/10388>.

52 Elliot, E.D., and Esty, D.C., 'Advanced Introduction to U.S. Environmental Law,' (2021) Cheltenham, UK: Edward Elgar Publishing, <https://doi.org/10.4337/9781800374898>.

topped 12.4 million barrels per day, with more than 50 million Americans living in counties with oil and gas production facilities. The U.S. Oil Pollution Act ensures an effective clean-up exercise for polluted areas. Even though OPA is thirty-three years old, the standards in the act remain strong in ensuring the prevention, remediation, clean-up, and punishment of oil spills. The act came at a time oil spills were rife in the U.S. Although there are some other countries with fair models that could be copied, however, their legal and governmental structures are different from what exists in Nigeria.

This U.S. oil pollution legal framework is an excellent approach to confronting the oil spill menace Nigeria is irretrievably embroiled in. A careful consideration of the current situation in Nigeria reveals that it is currently facing the pre-1990 situation in the United States and that she (Nigeria) lacks presently the standards enacted in the Oil Pollution Act of 1990. The significant provisions in the U.S. Oil Pollution Act are highlighted below.

7.1 The Existence of a Contingency Plan (Oil Spill Liability Trust Fund)

After every spill, one pertinent question ensues: who pays for this? Of course, the polluter must pay for it (clean-up, response and restoration)[53]. However, polluters scarcely take responsibility for clean-up and damages. Moreover, the assessment of environmental damage to these communities could take many years to complete. In a bid to ensure a prompt response, the U.S. Federal Government set up an immediate source of funding for federal and state agencies. This source is called the "Oil Spill Liability Trust."[54] The fund can provide up to $1 billion for an oil incident. Even though jurisdictions do not wait for the polluter to clean up before their levels of government swing into action, if the polluter is ultimately deemed liable for the spill, they must reimburse all expenses to the Federal Government.[55]

The Act provides for adequate federal resources that will be available to respond to oil spills, i.e., clean-up of the site and damages. The U.S. President, acting either through the Environmental Protection Agency (EPA) or the U.S. Coast Guard, can perform the immediate clean-up[56]. This is referred to as "federalizing" the spill. This prevents undue delay while waiting for the spiller to deploy its clean-up forces. The fund is also available to pay claims for damages resulting from oil discharge that exceed the responsible party's liability limits. In addition, the oil spill liability trust fund will be utilized if a polluter cannot be found, is unknown, unwilling, or unable, or if the polluter has reached his limit under the law.

53 Russell V. Randle, *Oil Pollution Deskbook* (2nd ed. 2012).
54 S. 9001 OPA, 26 U.S.C.A. S.9509
55 S. 1001L (31) of OPA, (33 U.S.C 2701)
56 S. 4201 of OPA

7.2 The Concurrent Operation of State and Federal Laws (Non-Preemption of State Laws)

The Oil Pollution Act (OPA) did not pre-empt state laws. Individual states may impose additional liability (including unlimited liability), funding mechanisms, requirements for removal actions, and penalties for responsible parties in addition to those prescribed for the Federal Government by the Act[57]. As a result of this, several states have enacted laws covering oil spill-related incidents.[58] For instance, the Alaska Administration Code, amongst many other state laws, provides that, except if pre-empted by Federal Law, specific requirements apply to each facility or operation for which an approved oil discharge prevention and contingency plan is required.[59] This State Code also mandates owners and operators to provide security measures and surveillance appropriate to each component of their operations to minimize the risk of vandalism, sabotage, and unauthorized entry.[60] In California, Lempert-Keene-Seastrand Oil Spill Prevention and Response Act makes provisions to prevent oil spills. And very recently, the governor signed a bill that increased criminal penalties for oil spill-related offenses. A California state court must now impose a fine of between US$ 10,000 and US$ 1,000,000. Again, for spills over 1,000, the court is permitted to impose an additional fine of up to $1,000 per gallon spilled. According to the OPA, states are afforded federal funds (up to US$ 250,000 per incident) for the immediate removal, mitigation, or prevention of a discharge. They can also be reimbursed for later-incurred costs.[61]

7.3 Higher Liability Limit for Responsible Parties

In the United States, there is an established liability scheme for various degrees and volumes of oil spilled by any facility or vessel owner. The Oil Pollution Act of the U.S. makes for a radical provision for the U.S. Government to establish liability against a party responsible for causing an oil spill or contributing to the action. If a party is responsible for an oil spill, such party would be liable for the removal costs and damages. The removal costs include all costs incurred by the United States, the responsible party, or any other person for any acts done by them. In addition, "Damages" include injury to natural resources, loss of real or personal property, loss of subsistence use of natural resources, loss of revenues resulting from destruction of property or natural resource injury, lost profit and earning capacity resulting from property injury or natural resource injury, and cost of providing extra public services during and after spill response.[62]

---

57 Section 1018 of OPA

58 Morgan, J.D., 'The Oil Pollution Act of 1990', (2011) 6 (1) Fordham Envtl. L. Rev. 5 <https://ir.lawnet.fordham.edu/elr/vol6/iss1/5>, accessed 10 August 2023.

59 Title 18 Chapter 75 Article 1 Alaska Administrative Code, 18 AAC 75. 007. *General Oil Pollution Prevention Requirement*

60 Ibid.

61 Section 1019 of OPA

62 Section 1002 of OPA

Furthermore, the Oil Pollution Act places strict liability on the party responsible for the spill[63]. A claimant, i.e., a victim of an oil spill, only needs to prove that he relies on the polluted environment for his livelihood.[64] However, a responsible party will not be liable if they can prove that the cause of discharge was an act of God, an act of war, or an act/omission of a third party[65].

The liability limit for responsible parties at onshore facilities and deepwater ports is up to US$ 350 million per spill. In comparison, holders of permits for offshore facilities are liable for up to US$ 75 million per spill plus removal costs. Further, the liability for tank vessels larger than 3,000 gross tons is US$ 1,200 per gross ton or $10 million, whichever is higher.[66] This higher legal liability under the Oil Pollution Act motivated the oil industry to respond more effectively to future oil spills.[67]

7.4 Punitive Measures Against Oil Discharge (Tougher Criminal Penalties and Higher Civil Penalties)

In the United States, failure to notify the appropriate federal agency of a discharge or spill of oil carries a maximum fine of US$ 250,000 and US$ 500,000 for an individual and organization, respectively, and 15 years in prison upon conviction[68]. However, this is only applicable for 'knowing endangerment,' i.e., a violation that places another person in imminent danger of death or serious bodily injury. A negligible violation carries a fine of US$ 25,000 and one year of imprisonment, while an intentional violation carries a fine of US$ 50,000 and a term of imprisonment not exceeding three years.[69] In addition, if a responsible party notified the appropriate authority but failed to conduct a removal action ordered under the Oil Pollution Act or for failure to comply with such an order, the court can assess a civil penalty of up to US$ 25,000 per day for the non-conduct of the cleanup or removal exercise.[70]

7.5 Adequate Planning and Prevention (Formidable Spill Prevention and Control for All Oil Facilities)

The Oil Pollution Act, in a bid to ensure adequate planning and prevention against oil spill incidences, mandates periodic inspections of oil facilities and vessels and the development of response plans for worst-case discharges.[71] There are two federal response agencies responsible for

---

63 Morgan, J.D., 'The Oil Pollution Act of 1990', (2011) 6 (1) Fordham Envtl. L. Rev. 5 <https://ir.lawnet.fordham.edu/elr/vol6/iss1/5>, accessed 10 August 2023.

64 Olugbenga, T., Owolabi, S., and Okonkwo, E.C., 'Compensation for Environmental Pollution and Justice Procurement in the Niger Delta Area of Nigeria: The Mass Media Role', (2014) 16 (7) Journal of Sustainable Development in Africa. <https://api.semanticscholar.org/CorpusID:110384194>, accessed 10 August 2023.

65 Section 1003(a)(3) of OPA

66 Sec. 1004 of OPA

67 Elliot, E.D., and Esty, D.C., 'Advanced Introduction to U.S. Environmental Law,' (2021) Cheltenham, UK: Edward Elgar Publishing <https://doi.org/10.4337/9781800374898>.

68 Section 4301(a) & (c) of OPA

69 Ibid

70 Section 4301(b) of OPA

71 Section 4202 of the OPA

preventing and responding to oil spills in the U.S.: the Environmental Protection Agency (EPA) and the U.S. Coast Guard. While the EPA is the lead federal response agency for oil spills occurring in inland waters or adjacent shorelines, the U.S. Coast Guard is the lead federal agency for spills in coastal waters and deepwater ports. Title IV of the Oil Pollution Act contains numerous provisions for preventing oil pollution in the U.S. For instance, the U.S. Coast Guard must apply stricter standards and procedures for issuing and renewing licenses.[72] Oil companies in the United States must have oil spill control measures and an emergency response plan, which must be filed with the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE) and the US Coast Guard, respectively.[73] That is, vessels and facilities are prohibited from handling, storing, or transporting oil if they do not have a plan approved by these agencies.[74]

On its part, the EPA has an emergency response program that allows it to swing into action immediately after a spill occurs. It either conducts the removal action, i.e., clean-up, by funding the response actions directly or oversees removal actions undertaken by other parties.[75] The agency's oil spill prevention program comprises Spill Prevention, Control, and Countermeasure (SPCC). The program has reduced the number of spills to less than 1% of the total volume of oil handled each year.[76] Furthermore, to prevent future oil spills, the SPCC rules mandate that all oil facilities have an SPCC plan. Such plans include periodic inspections and equipment testing, using suitable equipment and pipeline, etc. The Oil Pollution Act also requires all new vessels built for oil transportation to be equipped with a double hull when operating in the U.S.[77]

8. THE LEGAL SYSTEM AND OIL GOVERNANCE IN NIGERIA AND U.S.

Both countries practice Bicameralism, which is the operation of two legislative houses. The similarity in the form of government in both countries makes a model easily transferable from one country to another. Countries within the European Union, Canada, and Australia all practice the parliamentary system of governance. Thus, a developing country like Nigeria might not be fully suited to copy from such a legal and political system.

There exist numerous differences in the governance framework of oil and gas between the United States and Nigeria. In the U.S., it is easy for

[72] 46 U.S.C.A S. 7503 and 7701-7704.
[73] S. 4202 of OPA
[74] Congressional Research Service, 'Oil Spills: Background and Governance' (2017) Congressional Research Service <https://www.crs.gov>, accessed 20 August 2023.
[75] United States Environmental Protection Agency, 'EPA's Role in Emergency Response' 6 June 2023 <www.epa.gov/emergency-response/epas-role-emergency-response>, accessed 20 June 2023.
[76] United States Environmental Protection Agency, 'Basic Information about Cleanups', <www.epa.gov/cleanups/basic-information-about-cleanups#oil> accessed 20 March 2023.
[77] S. 4115 of OPA

the government to recoup back any amount it takes out of the contingency funds to fund an oil spill because of the functioning legal system. The responsible parties can be held to refund such amounts by the U.S. Courts. However, such an effort to recover those amounts might be complicated in Nigeria because of the prevalence corruption of in the Nigerian judiciary. Corruption coupled with maladministration in the country might hamper the effectiveness of the implementation of the U.S. model in Nigeria. Similarly, in the U.S., the dominant model is private ownership of oil and gas. The exploration and production of oil and gas are typically done via an oil and gas lease between the landowner (lessor) and an oil company (lessee). This is in stark contrast to what is obtainable in Nigeria, where the Federal Government owns all the lands and resources, including oil.

Lastly, the United States has gradually begun to transition to non-renewable energy resources, while Nigeria is still heavily reliant and keeps investing in the development of oil and gas.

9. THE PROPOSED NEW STANDARD

The current predicament faced by Nigeria can be likened to the situation in the U.S. before the enactment of the Oil Pollution Act in 1990. The U.S. at that time had no adequate or formidable preventive measures in place; the criminal and civil penalties were very lenient; there was no availability of funds or trusts for clean-up activities, there was no standing liability limit, and there was no mandate on the federal government to carry out the immediate cleanup. The fragmented collection of laws with limited safeguards for oil spill incidences was the situation in the U.S. before the enactment of the Oil Pollution Act of 1990. The legislation includes the Clean Water Act of 1972, the Ports and Waterways Safety Act of 1972, the Trans-Alaska Pipeline Authorization Act of 1973, the Deep-Water Port Act of 1974 and the Outer Continental Shelf Land Act of 1978. There has been a significant reduction in oil spills in the U.S. due to the Oil Pollution Act, which results from increased governance in regulating the oil industry.[78] This improvement was immediately seen four years after the passage of the Act. In 1994, Morris J. Berman discharged 750,000 gallons of heavy oil off the coast of Puerto Rico, and within 24 hours of the spill, containment equipment and personnel were already on site.[79]

To address the current weak regulatory framework on oil spills in Nigeria, such as the pre-emption of state laws, the lack of a contingency plan, the lack of a liability scheme for responsible parties, etc., the following must be urgently considered.

First, the provision in the Nigerian Constitution that gives exclusive jurisdiction on oil and gas-related matters to the federal government, thereby, excluding state governments from exercising jurisdiction either

[78] Bender, P., 'Lawmakers Question Coast Guard on Safety of Oil Tankers', Gannett News Serv., Feb. 17, 1993.

[79] Morgan, J.D., 'The Oil Pollution Act of 1990', (2011) 6 (1) Fordham Envtl. L. Rev. 5 <https://ir.lawnet.fordham.edu/elr/vol6/iss1/5>, accessed 10 August 2023.

through law-making or enforcement activities, must be amended so that oil and gas matters in Nigeria are placed on the concurrent list in the constitution. And while the Federal Government may exercise broad authority, States should also be allowed to make and enforce legislation on "oil and gas" on such matters as preventing and controlling oil pollution.

Generally, there exist some mechanisms for constitutional change. Nigeria like many other countries that operates Federalism has a rigid Constitution.[80] The authority to amend the Constitution is contained in Section 9 of the 1999 Constitution which provides that an amendment may be proposed with a two-thirds majority vote in both the Senate and the House of Representatives, respectively, and subsequently approved by a resolution of the Houses of Assembly of not less than two-thirds of all the States. However, there exist some factors that might hinder the amendment of the Constitution to allow States to exercise authority over the oil and gas sector. For instance, the competition for the control of power and resources by all levels of government is a worrisome issue. The Federal Legislature lacks the resolute to do what wouldn't be in the interest of the executive; hence, an amendment to give state governments authority to regulate oil and gas would not seem to be in the interest of the Executive. Additionally, because corruption is so rife in Nigeria, stakeholders in the oil industries, like the oil companies, would lobby against such an amendment. Another problematic issue is the slow operation of the Legislative houses. Such amendment might not be concluded in the four years tenure of the Legislative houses.

Given the importance of oil to the Nigerian economy, the Executive and the Legislature can dutifully harmonize and strategize a straightforward and timely amendment of the Constitution. These branches of government just started a new dispensation; hence a strong determination could see a successful amendment between 2023 and 2027. The Constitution should be responsive to the socio-economic demands of the country. Moreover, to ensure a comprehensive legal framework, this paper will propose enacting an Oil Spill Control Act by the Nigerian Legislature, which will harmonize all existing laws governing oil pollution in Nigeria. For this new framework to be adequate, the following standards must be enacted into a new law, or the existing legislation must be amended to accommodate them as new provisions.

9.1 Creation of an Oil Spill Liability Trust Fund as a Contingency Plan

The Federal Government in Nigeria should set up a trust fund to immediately clean up oil spill-impacted sites. This will ensure the immediate containment and clean-up of oil spills before they spread into a larger environment. The proposed fund must be adequate for ensuring effective clean-up operations. An amount above US$ 1 billion should be sufficient. Likewise, the fund must be available for state governments to utilize for clean-up activities. If such a trust fund is created for use in

[80] Okpanachi, E., and Garba, A., 'Federalism and Constitutional Change in Nigeria', (2010) 7(1) Federal Governance <https://doi.org/10.24908/fg.v7i1.4388>.

Nigeria, the appropriate federal and state agencies would be able to address an oil spill incident promptly.

9.2 No Pre-Emption of State Laws

A somewhat inimical provision to the environment in the Nigerian Constitution is the shackling of state and local governments from exercising any authority on oil matters.[81] The provision has deterred state governments from putting up measures to prepare for, prevent, and perform immediate clean-up exercises on impacted sites. This provision of the constitution[82] has rendered States powerless in imposing liabilities, fines, and penalties against responsible parties. It has stifled their ability to enact laws covering oil-related incidents.

Taking a cursory look at the U.S. standards, the Nigerian Constitution should be amended, mainly, Schedule II, to provide for concurrent jurisdiction of the Federal Government and the State Governments on oil-related matters. This would enable the State Government, in addition to the Federal Government's efforts, to perform or order immediate clean-up of impacted sites, impose fines and penalties on responsible parties, and define a liability limit for responsible parties.

9.3 Creation of a Liability Scheme

The legal framework in Nigeria does not provide for a liability scheme nor limits for responsible parties in oil spill incidences. However, oil companies must perform clean-up operations on oil spill-impacted sites to all practicable extents.[83] The phrase 'all practicable extent' is discretionary and allows for flexibility. It is distinguishable from a term like "to the fullest extent possible." No Nigerian law stipulates what a party's liability should be when they cause an oil spill. On the other hand, the liability provision in the U.S. spells out the liability standards[84], the amount of liability (liability limits), and the responsible parties[85].

However, it is necessary at this juncture to clarify who a responsible party is in both Jurisdictions and distinguish between them. In the U.S., 'responsible parties' are oil companies, i.e. (facility owners and vessel owners); in Nigeria, responsible parties could be oil companies, oil thieves, or oil saboteurs. So, looking at the U.S. standard, Nigeria should enact new legislation that would contain provisions for the minimum and maximum amount to be paid by Oil Companies in the event of an oil spill. This would ensure that a proper and adequate clean-up operation is done immediately on the impacted site and that affected parties get the necessary damages. This liability limit would also provide an established liability scheme for various degrees and volumes of oil spilled by Oil Companies.

---

81 Schedule II, Part I, Item 39 of the 1999 Constitution of the Federal Republic of Nigeria
82 Ibid
83 S. 6(2) NOSDRA Act.
84 Section 1004 of the OPA.
85 Section 1003 (a)(3) of the OPA.

On the other hand, it is difficult to establish a liability scheme for Oil Thieves and Saboteurs. The reason for this is the differences in the financial strengths of each person or group. Therefore, in addition to the already prescribed stringent punitive measure by the Petroleum Production and Distribution (Anti-Sabotage) Act, Oil thieves and Saboteurs should be made to pay the total clean-up cost of the impacted sites.

9.4 Stringent Punitive Measures

An interesting phenomenon about oil spill governance in Nigeria is that despite the shoddiness of existing laws in preventing and combating oil spills, one piece of legislation punishes oil theft and sabotage, i.e., the Petroleum Production and Distribution (Anti-Sabotage) Act. It defines the offense of sabotage and prescribes an adequate penalty for a guilty party, i.e., the death penalty or a term of up to 21 years. However, this provision has not deterred oil thieves and saboteurs from engaging in acts that cause an oil spill. Similarly, Nigeria is in the same class as countries like Azerbaijan, Thailand, and Mexico, which are battling oil theft and sabotage issues. Mexico recently enacted a stringent law like that of Nigeria to prevent oil theft. However, it has an additional provision for public officials who fail to report oil thefts. Such officials, if found guilty, will spend 5 years behind the bars. The act of oil theft is known as "Huachicoleo" in Mexico, while in Nigeria, it is called oil bunkering.

The lack of stringent deterrent actions against responsible parties for oil spills has been the primary cause of the daily occurrences of oil spills in Nigeria. The U.S. Oil Pollution Act stipulates harsh penalties for various violations.[86] A responsible party for an oil spill incident that places another person in imminent danger of death or bodily injury or who fails to notify the appropriate federal agency is liable for a fine of US$ 250,000 and a term of imprisonment up to 15 years. This measure is stringent for two reasons: it prevents oil spills by prescribing a penalty of bigger fines and lengthy jail time and prescribes further penalties for failing to report or disclose an oil spill incident to the appropriate authority.

Looking at the U.S. standard, Nigeria should enact legislation creating penalties for oil spills by any party. It should also embody stringent provisions sanctioning other offenses arising from oil spill incidents, such as a lack of a preventive plan, failure to report an oil spill immediately, an inadequate cleanup exercise, insufficient remediation, etc.

9.5 Oil Spill Prevention, Preparation, Detection, and Response

Although NOSDRA (the National Oil Spill Detection and Response Agency) was created to detect and respond to oil spills in Nigeria, the agency is not mandated with the responsibility of preventing and preparing for oil spills. Whilst they may attempt to operate in detecting and responding to oil spills, they lack the resources to immediately perform clean-up operations of oil spills, as Nigeria currently does not

[86] Section 4301 (a)(b)(c) of the OPA

have a workable Federal Thrust Fund from which they could access funds for immediate clean-up.

In the U.S., the Environmental Protection Agency (EPA) and the U.S. Coast Guide are federal agencies mandated with the prevention, preparation, detection, and response to oil spills. Looking at the U.S. Standard, lawmakers in Nigeria should also expand the authority of NOSDRA to include the prevention and preparation of oil spills. Also, a federal trust fund should be created to enable them to access funds for immediate clean-ups of impacted sites.

10. CONCLUSION

This paper set out to examine the legal framework governing oil spills in Nigeria by critically assessing each of the relevant laws to see whether they contain the standards needed to ensure the right of members of the Niger Delta communities to healthy environments. This paper found that the existing legislation needs to be more robust and adequate as it needs the standards to curb and control oil spill incidences. The paper then considered the U.S. model and highlighted the importance of each contained standard.

Evidently, Nigeria needs a comprehensive, radical, and thorough effort to resolve the difficult legal and self-inflicted issues that have hobbled effective oil spill prevention, cleanup, and remedial efforts. To get this done, the Federal Government should adopt some U.S. standards. Although it is too early to predict if it will work out well, the new standard will provide a solid legal foundation to curb or reduce oil spill incidences in Nigeria to the barest minimum.

REFERENCES

Ajayi, O., 'NSCDC secures 122 convictions, 503 arrests in 2021', Vanguard, December 21, 2021, <https://www.vanguardngr.com/2021/12/nscdc-secures-122-convictions-503-arrests-in-2021/>, accessed 10 August 2023

Akinlo, A.E., 'How Important is Oil in Nigeria's Economic Growth?', (2012) 5(4) Journal of Sustainable Development 165. <https://doi.org/10.5539/jsd.v5n4p165>

Amnesty International, 'Petroleum, Pollution and Poverty in the Niger delta Index', Amnesty International Afr/44/017/2009. <http://www.amnesty.org/en/documents/afr44/018/2009/en/>, accessed 10 August 2023

Amnesty International, 'Nigeria: Petroleum, Pollution and Poverty in the Niger Delta', AFR 44/017/2009, 30 June 2009, <https://www.refworld.org/docid/4a4a1dfc2.html>, accessed 21 August 2023

Azubuike, S.I., and Songi, O., 'A Rights-based Approach to Oil Spill Investigations: A Case Study of the Bodo Community Oil spill in

Nigeria', (2020) 1.1 Global Energy, Law and Sustainability 28-54. <https://doi.org/10.3366/gels.2020.0005>

Bender, P., 'Lawmakers Question Coast Guard on Safety of Oil Tankers', Gannett News Serv., Feb. 17, 1993

Bosch, X., 'Exposure to oil spill has a detrimental effect on clean-up workers' health', (2003) 361 (9352) The Lancet 147. <https://doi.org/10.1016/S0140-6736(03)12249-0>

Chuks-Ezike, C.I., 'Deficient Legislation Sanctioning Oil Spill in Nigeria: A Need for a Review of the Regulatory Component of Petroleum Laws in Nigeria and the Petroleum Industries Bill.' (2018) 7(1) International Journal of Environment and Sustainability 30-44, <https://doi.org/10.24102/ijes.v7i1.816>

Congressional Research Service, 'Oil Spills: Background and Governance' (2017) Congressional Research Service <https://www.crs.gov>, accessed 20 August 2023.

Donnelly-Saalfield, J., 'Irreparable Harms: How the Devastating Effects of Oil Extraction in Nigeria Have Not Been Remedied by Nigerian Courts, the African Commission, or U.S. Courts', (2009) 15 Hastings West Northwest J. of Envtl. L. & Pol'y 371. <https://repository.uclawsf.edu/hastings_environmental_law_journal/vol15/iss2/11>, accessed 21 August 2023

Edafienene, A., 'Media exposure, policy agenda setting and risk communication in Sub-Saharan Africa: a case study of Nigeria's Niger Delta region', (2012) Ph.D. Dissertation, University of South Wales. <https://pure.southwales.ac.uk/en/studentthesis/media-exposure-policy-agenda-setting-and-risk-communication-in-subsaharan-africa(4ca95e78-cb00-4677-bf3b-c65d261bde3e).html>, accessed 10 August 2023

Elliot, E.D., and Esty, D.C., 'Advanced Introduction to U.S. Environmental Law,' (2021) Cheltenham, UK: Edward Elgar Publishing, <https://doi.org/10.4337/9781800374898>

Elum, Z.A., Mopipi, K., and Henri-Ukoha, A., 'Oil exploitation and its socioeconomic effects on the Niger Delta region of Nigeria', (2016) 23(13) Environ Sci Pollut Res 12880–12889. <https://doi.org/10.1007/s11356-016-6864-1>

Fagbohun, O., 'Reappraising the Nigerian Constitution for Environmental Management', (2002) 1 (1) Ambrose Alli University Law Journal 44

Ikpeze, N., 'Fusion of anti–corruption agencies in Nigeria: a critical appraisal', (2013) 1(1) Journal of Sustainable Development Law and Policy 148-167. <https://www.ajol.info/index.php/jsdlp/article/view/140528/130269>, accessed 10 August 2023

Izoukumor, N.A., 'A Critical Assessment of the Pollution Prevention Laws and Regulations of Nigeria: Why They Failed to Protect the Environment of Nigeria', (2019) 87 Journal of Law, Policy and Globalization, <https://doi.org/10.7176/jlpg/87-06>

Jonathan, R., 'CRS Report for Congress Oil Spills in U.S. Coastal Waters: Background, Governance, and Issues for Congress', (2010)

Congressional Research Service 7-5700, <https://www.epw.senate.gov/public/_cache/files/d/b/db4335ea-2eac-4e97-b37d-7bb90bb4b165/01AFD79733D77F24A71FEF9DAFCCB056.crs-oilspills043010.pdf>, accessed 10 August 2023

Kadafa, A.A., Zakaria, M.P., and Othman, F., 'Oil Spillage and Pollution in Nigeria: Organizational Management and Institutional Framework', (2012) 2(4) Journal of Environmental and Health Science 22 <https://api.semanticscholar.org/CorpusID:109426229>

Kalu, V.E., and Stewart, N.F., 'Nigeria's Niger Delta Crises and Resolution of Oil and Gas Related Disputes: Need for a Paradigm Shift', (2007) 25(3) Journal of Energy and Natural Resources Law 247. <https://doi.org/10.1080/02646811.2007.11433462>

Konne, B.R., 'Inadequate Monitoring and Enforcement in the Nigerian Oil Industry: The Case of Shell and Ogoniland,' (2014) 47(1) Cornell International Law Journal 181. <https://scholarship.law.cornell.edu/cilj/vol47/iss1/6>, accessed 21 August 2023

Morgan, J.D., 'The Oil Pollution Act of 1990', (2011) 6 (1) Fordham Envtl. L. Rev. 5 <https://ir.lawnet.fordham.edu/elr/vol6/iss1/5>, accessed 10 August 2023

National Research Council (U.S) Committee on Oil in the Sea, Inputs, Fates, and Effects**, '**Oil in the Sea III: Inputs, Fates, and Effects', (2003) National Academi**c**s Press (U**.**S), **<**https://doi.org/10.17226/10388**>**

Nwilo, P.C., and Badejo O.T., 'Oil Spills Problems and Management in the Niger Delta', (2005) (1) International Oil Spill Conference Proceedings 1 May 2005, 567–570. <https://doi.org/10.7901/2169-3358-2005-1-567>

Ojewale, O., and Le Roux, A., 'Endless Oil spills blackens Ogoniland's prospect', Institute for Security Studies, March 2022, <https://issafrica.org/iss-today/endless-oil-spills-blacken-ogonilands-prospects>, accessed 20 July 2023

Okonkwo, E.C., 'Environmentally displaced persons in the Niger Delta: challenges and prospects', (2016) Energy, Governance and Sustainability 269–290. Edward Elgar Publishing, Cheltenham, United Kingdom. <https://doi.org/10.4337/9781785368462.00021>

Okpanachi, E., and Garba, A., 'Federalism and Constitutional Change in Nigeria', (2010) 7(1) Federal Governance, <https://doi.org/10.24908/fg.v7i1.4388>

Olugbenga, T., Owolabi, S., and Okonkwo, E.C., 'Compensation for Environmental Pollution and Justice Procurement in the Niger Delta Area of Nigeria: The Mass Media Role', (2014) 16 (7) Journal of Sustainable Development in Africa, <https://api.semanticscholar.org/CorpusID:110384194>, accessed 10 August 2023

Ordinioha, B., and Brisibe, S., 'The human health implications of crude oil spills in the Niger Delta, Nigeria: An interpretation of published

studies', (2013) 54 (1) Nigeria Medical Journal 10. <https://doi.org/10.4103/0300-1652.108887>

Peter Hansen, 'Climate Justice in Nigeria', Climate Scorecard, March 2022, <www.climatescorecard.org/2022/03/climate-justice-in-nigeria/>, accessed 21 July 2023

Sule-Iko, S.S.S., and Nwoye, M. I., 'Effect of International Crude Oil Prices on Nigeria's Gross Domestic Product from (1985-2020)', (2023) 11 Journal of Human Resource and Sustainability Studies 118-137. <https://doi.org/10.4236/jhrss.2023.111008>

U.S. Energy Information Administration, 'Oil and petroleum products explained: Where our oil comes from', U.S. Energy Information Administration, 16 September 2022, <https://www.eia.gov/energyexplained/oil-and-petroleum-products/where-our-oil-comes-from.php>, accessed 20 August 2023

Ugbaja, F., 'Regulation of Environmental Pollution in the Nigerian Oil and Gas Industry: The Need for an Alternative Approach' (2016) master's thesis, University of Calgary, Canada. <https://prism.ucalgary.ca>; <http://doi.org/10.11575/PRISM/27585>

United Nations Environmental Programme, 'Environmental Assessment of Ogoni land' (2011)', <https://wedocs.unep.org/bitstream/handle/20.500.11822/7947/-Environmental%20Assessment%20of%20Ogoniland-2011UNEP_OEA.pdf?sequence=3&isAllowed=y>, accessed 10 August 2023

United States Environmental Protection Agency, 'Basic Information about Cleanups', <www.epa.gov/cleanups/basic-information-about-cleanups#oil> accessed 20 March 2023

United States Environmental Protection Agency, 'EPA's Role in Emergency Response' 6 June 2023 <www.epa.gov/emergency-response/epas-role-emergency-response>, accessed 20 June 2023

Uwakonye, M. N., Osho, G. S., and Anucha, H., 'The Impact Of Oil And Gas Production On The Nigerian Economy: A Rural Sector Econometric Model', (2016) 5(2) International Business & Economics Research Journal (IBER) 62. <https://doi.org/10.19030/iber.v5i2.3458>

AUTHOR'S DECLARATION AND ESSENTIAL ETHICAL COMPLIANCES

Author's Contributions (in accordance with ICMJE criteria for authorship)
This article is 100% contributed by the sole author. S/he conceived and designed the research or analysis, collected the data, contributed to data analysis & interpretation, wrote the article, performed critical revision of the article/paper, edited the article, and supervised and administered the field work.

Funding
No funding was available for the research conducted for and writing of this paper. Therefore, acknowledging any support agency is not applicable in case of this research or the written work. However, informal support of institutional supervisors, colleagues and respondents is duly acknowledged.

Research involving human bodies or organs or tissues (Helsinki Declaration)
The author(s) solemnly declare(s) that this research has not involved any human subject (body or organs) for experimentation. It was not a clinical research. The contexts of human population/participation were only indirectly covered through literature review. Therefore, an Ethical Clearance (from a Committee or Authority) or ethical obligation of Helsinki Declaration does not apply in cases of this study or written work.

Research involving animals (ARRIVE Checklist)
The author(s) solemnly declare(s) that this research has not involved any animal subject (body or organs) for experimentation. The research was not based on laboratory experiment involving any kind animal. The contexts of animals not even indirectly covered through literature review. Therefore, an Ethical Clearance (from a Committee or Authority) or ethical obligation of ARRIVE does not apply in cases of this study or written work.

Research on Indigenous Peoples and/or Traditional Knowledge
The author(s) solemnly declare(s) that this research has not involved any Indigenous Peoples as participants or respondents. The contexts of Indigenous Peoples or Indigenous Knowledge, if any, are only indirectly covered, if any, through literature review. Therefore, an Ethical Clearance (from a Committee or Authority) or prior informed consent (PIC) of the respondents or Self-Declaration in this regard does not apply in cases of this study or written work.

Research involving Plants
The author(s) solemnly declare(s) that this research has not involved the plants for experiment or field studies. The contexts of plants are only indirectly covered through literature review. Yet, during this research the author(s) obeyed the principles of the Convention on Biological Diversity and the Convention on the Trade in Endangered Species of Wild Fauna and Flora.

(Optional) Research Involving Local Community Participants (Non-Indigenous)
The author(s) solemnly declare(s) that this research has not directly involved any local community participants or respondents belonging to non-Indigenous peoples. Neither this study involved any child in any form directly. The contexts of different humans, people, populations, men/women/children and ethnic people are only indirectly covered through literature review. Therefore, an Ethical Clearance (from a Committee or Authority) or prior informed consent (PIC) of the respondents or Self-Declaration in this regard does not apply in cases of this study or written work.

(Optional) PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses)
The author(s) has/have NOT complied with PRISMA standards. It is not relevant in case of this study or written work.

Competing Interests/Conflict of Interest
Author(s) has/have no competing financial, professional, or personal interests from other parties or in publishing this manuscript. There is no conflict of interest with the publisher or the editorial team or the reviewers.

Attribution and Representation
All opinions and mistakes are the author(s)' own and cannot be attributed to the institutions they represent. The publisher is also not responsible either for such opinions and mistakes in the text or graphs or images.

Rights and Permissions

Open Access. This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made. The images or other third-party material in this article are included in the article's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this license, visit http://creativecommons.org/licenses/by/4.0/.

***

To see original copy of these declarations signed by Corresponding/First Author (on behalf of other co-authors too), please download associated zip folder [Ethical Declarations] from the published Abstract page accessible through and linked with the DOI: https://doi.org/10.33002/jelp03.02.02.